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ABSTRACT

In the past several years, numerous educational climate instruments and questionnaires have been developed. One such instrument is the Charles F. Kettering (CFK) School Climate Profile, a popular measure of school climate that is widely used to gather data for administrative planning and curriculum revision. The instrument is patterned on the perceptual measurement--individual attribute approach to measuring and conceptualizing climate and refers to individual attributes. The individual attributes are seen as the intervening psychological process whereby the individual translates the interaction between perceived organizational attributes and individual characteristics into a set of attitudes, behaviors, and expectations. This study examines general climate profile responses from four schools with 822 subjects (school personnel and students). Principal component factor analysis indicated unidimensionality of the scale. Additional analyses suggest different subscales than those given for the CFK instrument. Subscale and response category modifications designed to improve overall scale validity and reliability are offered. The subscale revisions may indicate more reliable factors for examination of organizational climate than are present in the original CFK. Analysis of reading level in the CFK indicates caution in use with slow readers or those below grade 9. The document includes 14 tables and a 22-item bibliography. (JB)

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**A BEHAVIORAL ANALYSIS OF THE CHARLES F. KETTERING
CLIMATE SCALE**

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ABSTRACT. A Behavioral Analysis of the Charles F. Kettering (CFK) School Climate Profile. This document examines General Climate Profile responses from four schools with 822 subjects composed of school personnel and students. Principal component factor analysis indicated unidimensionality of the scale. Additional analyses suggest different subscales than those given for the CFK instrument. Subscale and response category modifications designed to improve overall scale validity and reliability are offered. The subscale revisions may indicate more reliable factors for examination of organizational climate than are present in the original CFK. Analysis of reading level in the CFK indicates caution in use with slow readers or those below grade nine.

A BEHAVIORAL ANALYSIS OF THE CHARLES F.
KETTERING CLIMATE SCALE

ORGANIZATIONAL CLIMATE RESEARCH occupies a popular position in the psychological, industrial, and sociological literature. Climate concerns, favored research topics in the late 1960's and 1970's, have continued to be investigated more fully in the 1980's.

Three separate, but not mutually exclusive approaches, are used to measure and define organizational climate: (1) the multiple measurement-organizational attribute approach, (2) the perceptual measurement-organizational attribute approach and (3) the perceptual measurement-individual attribute approach (James and Jones, 1974).

Many of the characteristics of this third approach to climate research are identified in a series of publications by Schneider and his associates (Schneider, 1972; Schneider and Bartlett, 1968). Schneider and Hall describe organizational climate as a set of global or summary perceptions held by individuals about their organizational environment. These summative perceptions mirror the interaction between personal and organizational characteristics in which individuals form their perceptions about the overall organizational climate.

Climate took the form of "specific situation values" which reflect "those aspects of the situation to which individuals attach importance" (Schneider, 1973). The value or importance of

organizational characteristics is reflected by the selected events perceived and the climate perceptions formed from these perceived events. Thus, organizational climate is viewed as a summative evaluation of events based upon the interaction between actual happenings and the perception of those happenings (James and Jones, 1974). Climate is viewed as an individual perception and is described as personalistic. The interaction between the individual and the environment is seen as a summary perception or intervening variable of climate.

Schneider noted (1973) that climate data and shared perceptions of climate might be important for predicting the behavior of individuals within organizations. What is important to psychological researchers, then, is how individuals perceive their organizational environment; that is, the focus of the perceptual measurement-individual attribute approach to climate is on organizational climate as an individual (rather than as an organizational) attribute.

Although this approach assumes that situational and individual characteristics interact to produce a third set of perceptual intervening variables, such as assumption does not mean that perceived climate is different from an individual attribute. Rather, the intervening variables are individual attributes which provide a link between the situation and the behavior. Interaction, intervention and perception take place in the individual and therefore are individual attributes (James and Jones, 1974). Climate is treated as an individual attribute

because it is the individual's perceptions that are important, not the objective situation (Guion, 1973). Such an approach appears to provide a step toward the formulation of specific theoretical statements regarding the nature of the intervening psychological process between the organizational situation and the attitudes and behavior of individual members of the organization (James and Jones, 1974).

In the past several years numerous educational climate instruments and questionnaires have been developed. One such instrument is the Charles F. Kettering (CFK) School Climate Profile, a popular measure of school climate which is widely used to gather data for administrative planning and curriculum revision. The instrument is patterned within the perceptual measurement-individual attribute approach to measuring and conceptualizing climate and refers to individual attributes. The individual attributes are seen as the intervening psychological process whereby the individual translates the interaction between perceived organizational attributes and individual characteristics into a set of attitudes, behaviors and expectancies.

Within this approach to measuring and defining school climate, a clarification of appropriate conceptual variables and dimensions relevant to the psychological domain would be useful to school organizations. A clearer understanding of the variables of school climate could help in accurately assessing perceived organizational climate and in predicting individual behaviors and attitudes within organizations.

METHOD

Subjects

A total of 822 administrators, teachers, staff and students from an elementary, a junior high and two high school campuses completed Part A, the General Climate Factors section, of the CFK instrument. Seventy-five participants, 41 students and 34 administrators, teachers and school support personnel, completed the instrument at the elementary school. Junior high subjects included 227 students (seventh, eighth and ninth graders) and 30 members of the school staff. The combined respondents from the two high schools consisted of 411 ninth and tenth graders (79 at one school and 332 at the other) and a total of 79 school staff members. Of the 822 respondents, 679 were students and 143 were adult school staff members.

Materials and Procedures

Subjects filled out the School Climate Profile in their school classrooms or work areas. They were not required to sign their names but were asked to complete a short demographic section indicating their status.

The General Climate Factors section of the instrument consists of eight subscales: (1) respect, (2) trust, (3) high morale, (4) opportunity for input, (5) continuous academic and social growth, (6) cohesiveness, (7) school renewal and (8) caring.

Five questions (variables) comprise each subscale of the instrument. The response scale for the instrument is two discrepancy-format columns. Each column has four category points: 1 = almost never, 2 = occasionally, 3 = frequently and 4 = almost always. The left column is the "What Is" or perceived actual status column, while the right column is the "What Should Be" or perceived desired status column.

Words such as "collaborators" and "cohesiveness" were noted in the CFK instrument so the instrument was also analyzed using the Gunning Fog Index and the Fry Readability Graph to determine the level of reading difficulty. Obviously, degree of readability would clearly affect responses to the instrument.

RESULTS

Of the 822 subjects, there were 143 adults and 679 students. Table 1 reports the responses of students and Table 2 the responses of adults - school administrators, teachers and support staff. Essentially, the means ($\bar{X}$) and standard errors of the means (SE) are greater for the students than for the adults. This would be expected for the adult population studied as well as for the students.

Insert Tables 1 and 2 about here

Factor analysis was used to examine the construct validity of the instrument using the responses of all 822 subjects. Principal component analysis was selected as the factor analytic method since the study investigated the total variation of the scale items without regard to whether the variance was common or unique. Following standard multivariate procedures, only factors with eigenvalues greater than or equal to 1.0 were retained in the analysis. Only instrument questions with factor loadings greater than or equal to 0.4 were included in the final scale revision (Gorsuch, 1983; Kim and Mueller, 1978).

In the initial principal components analysis, six "What Is" column factors and five "What Should Be" column factors were extracted. The factor matrices for the initial extractions are found in Tables 3 and 4.

Insert Tables 3 and 4 about here

As can be seen from the results of the analyses, the columns appear to be unidimensional based on the loadings on the first factor or the principal component. Each of the matrices was rotated obliquely since it was determined that the columns appeared to be unidimensional; thus, the subscales would necessarily be intercorrelated.

Each of the factor structures was then reviewed. These "What Is" and "What Should Be" structure matrices are presented in Tables 5 and 6.

Insert Tables 5 and 6 about here

Based on the new item groupings, the six "What Is" factors (Table 5) are as follows: (1) Factor I - Items numbered 15, 24 and 26-40, which are from three subscales - Cohesiveness, School Renewal and Caring; (2) Factor II - Items numbered 8, 10, 12, 14 and 18, which are from the High Morale subscale; (3) Factor III - Items numbered 1, 2, 4-7 and 9, which are from two subscales - Respect and Trust; (4) Factor IV - Items numbered 16, 17, 19 and 20, which are from the Opportunity for Input subscale; (5) Factor V - Items numbered 3, 21, 22 and 25, which are from the Continuous Academic and Social Growth subscale; and, (6) Factor VI - Items numbered 11, 13 and 23, which are from the Student Concern subscale.

Based on the item groupings, the five "What Should Be" factors (Table 6) are as follows: (1) Factor I - Items numbered 32-40, which are from two subscales - School Renewal and Caring; (2) Factor II - Items numbered 18 and 20-31, which are from two subscales - Continuous Academic/Social Growth and Cohesiveness; (3) Factor III - Items numbered 8-15, which are from two subscales - Trust and High Morale; (4) Factor IV - Items numbered 1-7, which are from the Respect subscale; and (5) Factor V - Items numbered 16, 17 and 19, which are from the Opportunity for Input subscale.

Instead of eight subscales as the CFK's authors suggest for their scale, the factor analysis indicates six "What Is" column

factors and five "What Should Be" column factors. Tables 7 and 8 summarize these data, showing the items and eigenvalues for each new factor.

Insert Tables 7 and 8 about here

The reading complexity of the instrument was analyzed using two different readability formulas. Based on three 100 word samples, the Gunning Fog Index indicated an average grade equivalent reading difficulty of 11.5. The lowest grade equivalent of the three 100 word samples was 7.2 and the highest was 13.9 or almost that of sophomore college level. The Fry Readability Graph showed the average reading level to be at the beginning of the tenth grade.

DISCUSSION

Based on the factor findings noted in Tables 7 and 8, the discrepancy columns were compared. Retaining only those items which appear in both the "What Is" and the "What Should Be" columns after factor analyses, a composite group of questions results and reduces the total number of items to 25. The new "What Is" and "What Should Be" factors match most clearly as follows: Factor 1 "What Is" with Factor 1 "What Should Be"; Factor 2 "What Is" with Factor 3 "What Should Be"; Factor 3 "What Is" with Factor 4 "What Should Be"; Factor 4 "What Is" with Factor

5 "What Should Be"; and, Factor 5 "What Is" with Factor 2 "What Should Be". The overlap of the two column questions is summarized in Table 9.

Insert Table 9 about here

When each column's overlapping questions are matched, five revised subscales of merit exist, and there are only 25 remaining questions. (See Table 9 for this information). Factor I is composed of items numbered 32-40, which are originally from two subscales - six items from Caring and three from School Renewal. Analysis of the verbal content of these items suggests "caring" as the theme of this factor. (See revised CFK instrument in Appendix A.) Factor II is composed of items numbered 8,10,12 and 14, which are originally from two subscales - two items from trust and two from High Morale. The content of these items, however, suggests "morale" or "school spirit" as the main topic in the new subscale.

Factor III is constructed of items numbered 1,2 and 4-7, which are originally from two subscales - four items from Respect and two from Trust. The language in the items apparently pertains primarily to the topic of "respect". Factor IV consists of items numbered 16, 17 and 19, which are from the Opportunity for Input subscale and these items seem to still be closely related to the original subscale's title. Factor V includes items numbered 21,22 and 25, which are from the Continuous Academic/Social Growth subscale and still appear to be related to various aspects of

student or teacher growth.

The author's choice of a two-column discrepancy response format seems appropriate from a research perspective because of its applicability in general for first-time assessment trials (Johnson and Dixon, 1984; Witkin, 1977). However, with the use of only a four-point scale, a question arises as to whether there may indeed be a reduction in the respondents' discriminative powers. Traditional psychometric theory states that the reliability of individual rating scales is a monotonically decreasing function of the number of category points (Guilford, 1954). As the number of category points increases from 2 to 20, the reliability increases rapidly at first. It levels off at 7, and after point 11, there is very little gain in reliability from increasing the number of categories (Garner, 1960).

McKelvie (1978) has written that five-point scales are the most reliable, at least in measuring attitude-judgement tasks and proposed using five or six categories. He further argues that there is no psychometric advantage in a large number of scale categories and, on the other hand, discriminative power and validity may be reduced when fewer than five categories are used.

In an agree/disagree context, Jenkins and Taber (1977) found that the number of response categories above five did not, in any situation, yield a significant increase in Likert discriminability but this researcher has found that the following six category response choices recommended by Rotter (1972) seem to reflect equidistant-psychological order: 1 = disagree strongly; 2 =

disagree; 3 = tend to disagree; 4 = tend to agree; 5 = agree; and 6 = agree strongly. The CFK might be significantly improved by adoption of a five or six point response scale rather than the current four point response scale.

Based on an analysis of the instrument's average readability level, which ranges from tenth grade to a grade equivalent of 11.5 (with individual sections extending as high as 13.9), caution should be exercised in administering the instrument to elementary students or to poor readers at the high school level. The readability level could be lowered rather simply by shortening sentence length and by replacing difficult words with less complex language.

The original CFK scale yields so much information that an individual may become lost in a quagmire of data when attempting to analyze the instrument's results. Forty items, student versus adult responses and "What Is" versus "What Should Be" columns seem to expand exponentially when one is trying to delineate specific trends in school organizational climate for use in programmatic decisions relating to human behavior. Examining current perceptions of school climate (the "What Is" column) and comparing differences between student and faculty responses is one way to study the school's climate.

If a school administrator were to examine the data in Table 10, very few trends would be immediately apparent. But by calculating means by subscale, rather than item by item, and looking at differences between the means of adults and students

simplifies the process to some extent. (See Table 11.)

Insert Tables 10 and 11 about here

Since this study deals with the nature of organizational climate, given the data in Tables 10 and 11, what conclusions could be drawn concerning perceptions of the school climate of this particular sample? As shown on subscale 8 (Caring) in Table 11, the only noticeable statistic is the one that suggests that the adult school personnel ($\bar{X} = 3.3878$) perceive themselves to be more caring than do the students ($\bar{X} = 2.9036$). The difference between the means on the Caring factor is the only notable one among eight subscales. However, when the revised CFK of 25 items is analyzed, using the same data, more general differences can be noted immediately. (The means for individual items appear in Table 12 and the factor or subscale differences between means of students and adults on the "What Is" column appear in Table 13. A comparison of the original CFK and the revised CFK differences between adult and student means on the "What Is" column appears in Table 14.)

Insert Tables 12, 14 and 14 about here

Using Table 12, the revised CFK, several trends are suggested, which are not noticeable on the original CFK: (1) School personnel (adults) and students show fairly clear cut agreement on the state

of school spirit or morale and the morale, as measured by a four point response scale, is relatively high; and, (2) School personnel responses suggest that the adults in the school perceive themselves as being more caring and respectful than do students. They also see the school as more growth oriented than do the students. Thus, using the revised CFK, with an analysis of response scores, a school administrator could see areas of the school's climate which are murky using the original CFK. These results suggest that the revised CFK based on factor analyses, especially with the further addition of a six point (rather than the current four point) response scale, could clarify the nature of climate constructs.

SUMMARY AND CONCLUSION

Based on the factor analyses in this study, the currently used CFK subscale subdivisions may be inappropriate. This researcher understands from the CFK developers that they used only face validity in the instrument construction. The general test development literature suggests, however, that at least two types of validity measures be used in scale development.

When the CFK developers departed from this conventional approach to test construction, they arbitrarily designated and assigned names to various subscales in their instrument. In actuality, however, factor analysis shows that some of their subscales fragment and group into other subscales. The five new

factors or subscales which result from the factor analyses may be important in shedding light on what the crucial perceptual measurement-individual attributes of organizational climate are.

An analysis of the linguistic meanings of the individual items in each of the five revised subscales suggests the following general dimensions of school climate: caring (Factor I, original items 32-40); morale or school spirit (Factor II, items 8, 10, 12 and 14); respect (Factor III, items 1, 2 and 4-7); opportunity for input (Factor IV, items 16, 17 and 19); and growth (Factor V, items 21, 22 and 25).

In view of the CFK's reading difficulty of ten to 11.5 grade equivalents, the reading level of the instrument probably needs to be revised, especially if the instrument is administered to poor readers, junior high school students or elementary students. Vocabulary simplification and shortening of sentence length needs to be pursued.

The reliability and sensitivity of the instrument should be improved by increasing the number of points on the response scale from four to six. A wider spread of possible response would also increase variability in responses; consequently, the data would yield more useful diagnostic information for those investigating climate concerns.

The suggested revision of the CFK based on factor analyses is superior to the original in several ways: (1) The new instrument, consisting of only 25 items, would be quicker to administer; (2) The expanded Likert scale would improve

reliability and discriminative information for use in examining school climate variables; (3) Improved program decisions could be made based on the revision since irrelevant items are deleted based on the factor analyses; (4) A more accurate picture of student/school staff concerns would be obtained since the new scale retains only those items with a factor loading greater than or equal to 0.4; and (5) The revised instrument yields more reliable and clear cut information and narrows the variables of school climate to five factors. These five factors or subscales probably more closely reflect the actual constructs of school organizational climate than previously noted and, as a next step, should be useful in further research on the psychological nature of school climate.

A valid psychological scale is necessary to gather data which will help in accurately assessing perceived school organizational climate and in predicting individual behaviors and attitudes within organizations. This study strengthens the CFK scale by reducing it to 25 items based on factor analyses and by suggesting five possible conceptual variables and dimensions relevant to the perceptual measurement-individual attribute of organizational climate.

TABLE 1
Descriptive Statistics for Students
(N=674)

Item	<u>"What Is" Column</u>			<u>"What Shall Be" Column</u>		
	$\bar{x}$	SD	SE	$\bar{x}$	SD	SE
1	2.764	1.001	0.036	3.495	0.866	0.031
2	3.165	0.928	0.034	3.739	0.690	0.025
3	2.864	1.062	0.039	3.401	0.935	0.034
4	3.091	1.004	0.036	3.567	0.872	0.032
5	3.070	0.972	0.035	3.588	0.887	0.032
6	2.164	0.922	0.033	3.232	0.944	0.034
7	2.574	1.009	0.037	3.414	0.866	0.031
8	3.062	1.001	0.036	3.657	0.775	0.028
9	2.578	0.992	0.036	3.553	0.824	0.030
10	2.652	1.037	0.038	3.463	0.865	0.031
11	2.547	0.974	0.035	3.554	0.850	0.031
12	2.792	1.004	0.036	3.675	0.740	0.027
13	2.202	1.022	0.037	3.475	0.920	0.033
14	2.974	1.030	0.037	3.625	0.827	0.030
15	3.030	1.117	0.041	3.537	0.985	0.036
16	2.199	1.038	0.038	3.174	0.950	0.035
17	1.864	1.034	0.038	3.077	1.007	0.037
18	2.687	1.168	0.042	3.423	0.936	0.034
(table continues)						

Item	<u>"What Is" Column</u>			<u>"What Shall Be" Column</u>		
	$\bar{x}$	SD	SE	$\bar{x}$	SD	SE
19	2.343	1.070	0.039	3.259	0.994	0.036
20	2.739	1.126	0.041	3.422	0.995	0.036
21	2.637	1.022	0.037	3.365	0.970	0.035
22	2.753	1.036	0.038	3.534	0.882	0.032
23	2.609	1.060	0.038	3.489	0.980	0.036
24	2.846	1.128	0.041	3.511	0.964	0.035
25	2.633	1.108	0.040	3.347	1.024	0.037
26	3.029	1.101	0.040	3.454	1.046	0.038
27	2.756	1.215	0.044	3.496	1.094	0.040
28	2.600	1.076	0.039	3.340	1.099	0.040
29	2.522	1.054	0.038	3.302	1.042	0.038
30	2.989	1.106	0.040	3.619	0.937	0.034
31	2.648	1.149	0.042	3.416	1.077	0.039
32	2.678	1.059	0.038	3.330	1.072	0.039
33	2.774	1.147	0.042	3.478	1.030	0.037
34	2.649	1.111	0.040	3.293	1.131	0.041
35	2.749	1.107	0.040	3.365	1.079	0.039
36	3.115	1.174	0.043	3.546	1.033	0.038
37	3.088	1.167	0.042	3.547	1.044	0.038
38	2.794	1.137	0.041	3.429	1.052	0.038
39	2.685	1.165	0.042	3.384	1.103	0.040
40	2.971	1.144	0.042	3.559	1.021	0.037
Sum	108.899	23.378	0.849	138.136	24.772	0.900

TABLE 2
Descriptive Statistics for Adults
(N=143)

Item	"What Is" Column			"What Shall Be" Column		
	$\bar{x}$	SD	SE	$\bar{x}$	SD	SE
1	3.422	0.662	0.083	3.781	0.786	0.098
2	3.516	0.642	0.080	3.672	0.993	0.124
3	2.766	1.004	0.125	3.578	0.887	0.111
4	3.516	0.617	0.077	3.813	0.753	0.094
5	3.328	0.837	0.105	3.719	0.899	0.112
6	2.781	0.766	0.096	3.609	0.936	0.117
7	2.844	0.963	0.120	3.609	0.866	0.108
8	3.156	1.011	0.126	3.797	0.760	0.095
9	3.172	0.747	0.093	3.781	0.766	0.096
10	2.766	0.831	0.104	3.516	0.734	0.092
11	2.875	0.826	0.103	3.672	0.837	0.105
12	2.984	0.951	0.119	3.656	0.912	0.114
13	2.484	0.776	0.097	3.703	0.728	0.091
14	2.953	0.881	0.110	3.703	0.790	0.099
15	3.500	0.873	0.109	3.703	1.003	0.125
16	2.938	0.990	0.124	3.50	0.713	0.089
17	2.453	0.942	0.118	3.406	0.771	0.096
(table continues)						

Item	<u>"What Is" Column</u>			<u>"What Shall Be" Column</u>		
	$\bar{x}$	SD	SE	$\bar{x}$	SD	SE
18	2.156	1.087	0.136	3.422	0.813	0.102
19	2.688	0.957	0.120	3.484	0.756	0.094
20	3.078	0.965	0.121	3.625	0.826	0.103
21	3.016	0.917	0.115	3.547	0.815	0.102
22	3.078	0.878	0.110	3.672	0.818	0.102
23	2.578	0.851	0.106	3.563	0.924	0.115
24	3.109	1.010	0.126	3.641	0.824	0.103
25	2.734	0.963	0.120	3.500	0.873	0.109
26	3.047	0.862	0.108	3.594	0.868	0.108
27	2.641	1.089	0.136	3.594	1.019	0.127
28	2.766	1.095	0.137	3.422	1.179	0.147
29	2.891	0.911	0.114	3.500	0.926	0.116
30	3.250	0.976	0.122	3.672	0.944	0.118
31	2.859	0.941	0.118	3.672	0.818	0.102
32	3.203	0.760	0.095	3.594	0.849	0.106
33	3.000	0.909	0.114	3.656	0.912	0.114
34	2.844	0.877	0.110	3.516	0.776	0.097
35	3.047	0.898	0.112	3.625	0.745	0.093
36	3.391	0.953	0.119	3.688	0.852	0.107
37	3.266	0.963	0.120	3.750	0.836	0.104
38	3.344	0.930	0.116	3.750	0.713	0.089

(table continues)

Item	<u>"What Is" Column</u>			<u>"What Should Be" Column</u>		
	$\bar{x}$	SD	SE	$\bar{x}$	SD	SE
39	3.313	0.924	0.115	3.766	0.684	0.086
40	3.625	0.678	0.085	3.781	0.786	0.098
Sum	120.375	21.875	2.734	145.250	27.365	3.421

TABLE 3
Initial Principal Components Factor Pattern for
"What Is" Column Questions
(N=822)

Item	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6
1	0.338	0.262	0.321	0.115	0.092	0.163
2	0.381	0.312	0.332	0.191	0.097	-0.047
3	0.326	0.209	-0.065	-0.081	0.271	-0.356
4	0.347	0.209	0.258	0.177	0.307	-0.040
5	0.406	0.369	0.024	0.039	-0.006	-0.091
6	0.478	0.329	0.262	0.144	-0.053	0.268
7	0.412	0.282	0.197	0.036	-0.019	-0.124
8	0.493	0.210	-0.276	0.163	-0.126	-0.181
9	0.434	0.350	0.392	-0.021	0.159	-0.094
10	0.408	0.364	-0.174	0.132	0.167	0.027
11	0.507	0.391	-0.198	-0.025	-0.152	0.197
12	0.557	0.337	-0.278	0.255	-0.052	-0.052
13	0.315	0.348	-0.165	-0.096	-0.079	0.511
14	0.469	0.114	-0.385	0.220	-0.178	-0.148
15	0.563	0.071	0.126	0.214	-0.369	-0.132
16	0.562	0.211	0.225	-0.319	-0.254	-0.016
17	0.441	0.246	0.158	-0.551	-0.226	0.064
18	0.473	0.073	-0.559	-0.077	-0.071	-0.008
19	0.526	0.025	-0.042	0.446	-0.183	-0.232

(table continues)

Item	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6
20	0.663	0.019	0.001	-0.081	-0.357	-0.112
21	0.548	0.151	0.229	-0.253	0.223	-0.126
22	0.657	0.115	-0.012	-0.053	0.212	-0.115
23	0.539	-0.022	-0.417	-0.032	0.075	0.343
24	0.662	-0.115	-0.160	-0.079	0.010	-0.236
25	0.540	-0.062	-0.081	-0.302	0.272	-0.007
26	0.593	-0.284	-0.100	0.057	0.020	-0.106
27	0.618	-0.154	-0.258	0.163	-0.002	-0.048
28	0.660	-0.065	-0.216	-0.082	0.160	-0.005
29	0.646	0.001	-0.157	-0.130	0.166	0.110
30	0.687	-0.190	-0.014	0.055	0.099	0.026
31	0.649	-0.212	-0.174	-0.013	0.049	-0.091
32	0.633	-0.182	0.062	-0.132	0.277	0.170
33	0.663	-0.234	0.066	0.049	0.074	0.077
34	0.628	-0.221	-0.054	0.074	0.055	0.199
35	0.680	-0.233	-0.054	0.059	0.073	0.084
36	0.650	-0.320	-0.278	0.809	0.014	0.004
37	0.658	-0.288	0.182	0.115	-0.063	-0.160
38	0.711	-0.283	0.281	0.050	-0.133	0.070
39	0.672	-0.247	0.309	0.074	-0.243	0.069
40	0.642	-0.284	0.231	0.137	-0.105	0.184

TABLE 4
Initial Principal Components Factor Pattern for
"What Should Be" Column Questions
(N=822)

Item	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
1	0.433	0.281	0.265	-0.170	0.269
2	0.478	0.288	0.270	-0.195	0.049
3	0.415	0.346	0.217	-0.173	0.235
4	0.455	0.358	0.349	-0.214	0.098
5	0.522	0.383	0.249	-0.093	-0.024
6	0.517	0.340	0.228	0.088	0.079
7	0.550	0.258	0.268	-0.117	0.261
8	0.626	0.379	0.026	-0.027	-0.258
9	0.608	0.371	0.101	0.115	-0.119
10	0.480	0.270	0.034	0.236	-0.135
11	0.642	0.388	-0.022	0.098	-0.158
12	0.611	0.344	-0.024	0.013	-0.350
13	0.568	0.379	-0.014	0.131	-0.183
14	0.647	0.249	-0.161	-0.027	-0.267
15	0.608	0.269	-0.130	0.113	-0.244
16	0.615	0.161	-0.123	0.466	0.267
17	0.562	0.210	-0.176	0.366	0.384
18	0.612	0.132	-0.273	0.128	0.080
19	0.657	0.016	-0.289	0.184	0.192
(table continues)					

Item	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
20	0.690	0.110	-0.200	0.073	0.039
21	0.704	-0.002	-0.160	-0.093	0.193
22	0.733	-0.013	-0.268	-0.120	0.092
23	0.761	-0.064	-0.150	-0.191	-0.019
24	0.748	-0.103	-0.222	-0.212	0.010
25	0.710	-0.108	-0.190	-0.172	0.108
26	0.704	-0.107	-0.206	-0.082	0.009
27	0.715	-0.098	-0.123	-0.182	-0.149
28	0.708	-0.056	-0.162	-0.238	0.097
29	0.746	-0.102	-0.142	-0.159	0.116
30	0.775	-0.212	-0.112	-0.149	-0.082
31	0.700	-0.178	-0.163	-0.145	-0.083
32	0.727	-0.254	0.136	0.007	0.140
33	0.772	-0.316	0.129	-0.003	-0.055
34	0.700	-0.302	0.166	-0.105	-0.028
35	0.732	-0.356	0.144	0.116	-0.030
36	0.765	-0.370	0.214	0.115	-0.065
37	0.747	-0.384	0.204	0.057	-0.108
38	0.747	-0.384	0.246	0.173	-0.003
39	0.731	-0.330	0.228	0.143	-0.003
40	0.769	-0.385	0.254	0.074	-0.111

TABLE 5
Obliquely Rotated Factor Structure for
"What Is" Column Questions
(N=822)

Item	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6
1	0.263	0.087	0.545	0.217	0.044	0.214
2	0.273	0.203	0.622	0.248	0.071	0.066
3	0.140	0.317	0.235	0.180	0.457	-0.031
4	0.260	0.137	0.521	0.087	0.223	0.077
5	0.240	0.466	0.490	0.183	0.089	0.137
6	0.369	0.232	0.592	0.352	0.025	0.378
7	0.277	0.292	0.480	0.369	0.131	0.067
8	0.321	0.654	0.202	0.261	0.235	0.170
9	0.284	0.154	0.654	0.388	0.206	0.076
10	0.194	0.445	0.332	0.111	0.325	0.341
11	0.285	0.513	0.299	0.379	0.207	0.521
12	0.342	0.702	0.332	0.221	0.260	0.327
13	0.151	0.231	0.194	0.218	0.121	0.686
14	0.334	0.691	0.079	0.187	0.203	0.184
15	0.527	0.513	0.400	0.477	-0.059	0.026
16	0.430	0.283	0.406	0.730	0.166	0.210
17	0.208	0.151	0.266	0.738	0.222	0.296
18	0.311	0.624	-0.120	0.207	0.430	0.398
19	0.398	0.361	0.093	0.655	0.376	0.094

(table continues)

Item	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6
20	0.587	0.539	0.261	0.630	0.156	0.154
21	0.410	0.193	0.440	0.457	0.462	0.137
22	0.507	0.440	0.372	0.346	0.520	0.233
23	0.445	0.448	-0.027	0.115	0.434	0.633
24	0.583	0.538	0.126	0.390	0.475	0.111
25	0.444	0.238	0.155	0.299	0.604	0.288
26	0.623	0.418	0.077	0.236	0.351	0.099
27	0.586	0.569	0.085	0.181	0.355	0.228
28	0.561	0.476	0.131	0.273	0.555	0.340
29	0.535	0.405	0.186	0.300	0.530	0.432
30	0.688	0.402	0.234	0.277	0.398	0.245
31	0.624	0.480	0.080	0.282	0.450	0.191
32	0.629	0.190	0.229	0.254	0.508	0.356
33	0.702	0.322	0.245	0.284	0.334	0.233
34	0.660	0.342	0.163	0.209	0.318	0.356
35	0.699	0.398	0.180	0.254	0.381	0.286
36	0.758	0.224	0.329	0.346	0.212	0.063
37	0.733	0.363	0.291	0.377	0.213	-0.033
38	0.810	0.280	0.355	0.469	0.146	0.138
39	0.774	0.282	0.367	0.504	0.035	0.107
40	0.758	0.247	0.316	0.338	0.094	0.208

(table continues)

Item	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6
Eigen- value	10.3	6.5	4.4	5.2	4.3	3.1
Pct Variance	30.5	19.3	12.9	15.4	12.7	9.5

TABLE 6
Obliquely Rotated Factor Structure for
"What Should Be" Column Questions
(N=822)

Item	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
1	0.275	0.324	0.322	0.657	0.297
2	0.322	0.356	0.447	0.629	0.203
3	0.219	0.316	0.355	0.644	0.292
4	0.288	0.309	0.439	0.705	0.200
5	0.329	0.359	0.571	0.643	0.275
6	0.355	0.320	0.529	0.597	0.418
7	0.392	0.413	0.410	0.706	0.387
8	0.379	0.499	0.761	0.514	0.309
9	0.399	0.424	0.703	0.541	0.426
10	0.334	0.309	0.581	0.347	0.402
11	0.385	0.498	0.754	0.506	0.450
12	0.378	0.490	0.777	0.426	0.282
13	0.335	0.420	0.708	0.442	0.408
14	0.401	0.597	0.723	0.375	0.332
15	0.386	0.510	0.711	0.346	0.395
16	0.455	0.457	0.497	0.380	0.809
17	0.355	0.452	0.423	0.400	0.812
18	0.391	0.590	0.520	0.315	0.568
19	0.467	0.629	0.451	0.295	0.653
20	0.482	0.650	0.574	0.388	0.543

(table continues)

Item	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
21	0.522	0.716	0.442	0.452	0.501
22	0.523	0.783	0.501	0.389	0.476
23	0.600	0.786	0.530	0.421	0.362
24	0.581	0.811	0.488	0.375	0.365
25	0.568	0.730	0.471	0.320	0.406
27	0.593	0.730	0.534	0.346	0.263
28	0.535	0.762	0.440	0.434	0.366
29	0.603	0.772	0.449	0.432	0.428
30	0.697	0.786	0.499	0.347	0.323
31	0.605	0.732	0.462	0.291	0.298
32	0.753	0.628	0.364	0.443	0.425
33	0.826	0.669	0.447	0.380	0.339
34	0.783	0.561	0.403	0.340	0.364
35	0.830	0.600	0.403	0.322	0.381
36	0.885	0.605	0.433	0.357	0.364
37	0.868	0.608	0.424	0.336	0.300
38	0.889	0.565	0.394	0.359	0.406
39	0.843	0.506	0.405	0.374	0.395
40	0.904	0.606	0.442	0.368	0.310
Eigen- value	12.9	13.9	10.8	8.1	7.0
Pct Variance	24.5	26.3	20.5	15.3	13.3

TABLE 7
Factor Analysis Findings for "What Is" Column
(N=822)

Factors	Instrument Questions	Number of Questions	Eigenvalues	Pct of Variance	Cum Pct
1	15,24,26-40	17	12.477374	61.0	61.0
2	8,10,12,14,18	5	2.243655	11.0	72.0
3	1,2,4,5,6,7,9	7	2.147476	10.5	82.5
4	16,17,19,20	4	1.330114	6.5	89.0
5	3,21,22,25	4	1.167726	5.7	94.7
6	11,13,23	3	1.100813	5.3	100.0

TABLE 8

Factor Analysis Findings for "What Should Be" Column
(N=822)

Factors	Instrument Questions	Number of Questions	Eigenvalues	Pct of Variance	Cum Pct
1	32-40	9	17.317915	72.4	72.4
2	18,20-31	13	2.957623	12.4	84.8
3	8-15	8	1.501378	6.3	91.1
4	1-7	7	1.072285	4.5	95.6
5	16,17,19	3	1.603223	4.4	100.0

TABLE 9
 Overlap of "What Is" and "What Should Be"
 Factor Questions
 (N=822)

"What Is"		"What Should Be"		Question	Number of
Factors	Questions	Factors	Questions	Overlap	Questions
1	15,24,26-40	1	32-40	32-40	9
2	8,10,12,14,18	3	8-15	8,10,12,14	4
3	1,2,4,5,6,7,9	4	1-7	1,2,4,5,6,7	6
4	16,17,19,20	5	16,17,19	16,17,19	3
5	3,21,22,25	2	18,20-31	21,22,25	3
Composite				1,2,4,5,6	25
				7,8,10,12,	
				14,16,17,	
				19,21,22,	
				25,32-40	

TABLE 10

Comparison of Means between Adults
and Students on the "What Is" Column

N(adults) = 143; N(students) = 679

	Item	"What Is" Adults	Column Means Students	Difference
<u>Respect</u>	1	3.422	2.764	+0.658
	2	3.516	3.165	+0.351
	3	2.766	2.864	-0.098
	4	3.516	3.091	+0.425
	5	3.328	3.070	+0.258
<u>Trust</u>	6	2.781	2.164	+0.617
	7	2.844	2.574	+0.270
	8	3.156	3.062	+0.094
	9	3.172	2.572	+0.600
	10	2.766	2.652	+0.114
<u>High Morale</u>	11	2.875	2.547	+0.328
	12	2.984	2.792	+0.192
	13	2.484	2.202	+0.282
	14	2.953	2.974	-0.021
	15	3.500	3.030	+0.470
<u>Opportunity Input</u>	16	2.938	2.199	+0.739

(table continues)

	Item	"What Is" Adults	Column Means Students	Difference
	17	2.453	1.864	+0.589
	18	2.156	2.687	-0.531
	19	2.686	2.343	+0.345
	20	3.078	2.739	+0.339
<u>Continuous</u>	21	3.016	2.637	+0.379
<u>Academic & Soc-</u>	22	3.078	2.753	+0.325
<u>ial Growth</u>	23	2.578	2.609	-0.031
	24	3.109	2.846	+0.263
	25	2.734	2.633	+0.101
<u>Cohesiveness</u>	26	3.047	3.029	+0.018
	27	2.641	2.756	-0.115
	28	2.766	2.600	+0.166
	29	2.891	2.522	+0.369
	30	3.250	2.989	+0.989
<u>School</u>	31	2.859	2.649	+0.210
<u>Renewal</u>	32	3.203	2.678	+0.525
	33	3.000	2.774	+0.226
	34	2.844	2.649	+0.195
	35	3.047	2.749	+0.298
(table continues)				

	Item	"What Is" Adults	Column Means Students	Difference
<u>Caring</u>	36	3.391	3.115	+0.276
	37	3.266	3.088	+0.178
	38	3.344	2.794	+0.550
	39	3.313	2.685	+0.628
	40	3.635	2.971	+0.654

TABLE 11
Comparison of Factor Means between Adults and
Students on the "What Is" Column

Factor Number	Factor Name	Adults	Students	Difference
1	Respect	3.3096	2.9908	+0.3188
2	Trust	2.9438	2.6048	+0.3398
3	High Morale	2.9592	2.7090	+0.2502
4	Opp. for Input	2.6626	2.3664	+0.2962
5	C. Ac/Soc. Growth	2.9030	2.6956	+0.2074
6	Cohesiveness	2.9190	2.7792	+0.1398
7	School Renewal	2.9906	2.6998	+0.2908
8	Caring	3.3878	2.9306	+0.4572

TABLE 12

Comparison of Means between Adults and Students on the
"What Is" Column Using the Revised CFK

	Item	"What Is" Adults	Column Means Students	Difference
<u>Caring</u> (N=9)	32	3.203	2.678	+0.0525
	33	3.000	2.774	+0.226
	34	2.844	2.649	+0.195
	35	3.047	2.749	+0.298
	36	3.391	3.115	+0.276
	37	3.226	3.088	+0.178
	38	3.344	2.794	+0.550
	39	3.313	2.685	+0.628
	40	3.625	2.971	+0.654
<u>Morale</u> (N=4)	8	3.156	3.062	+0.094
	10	2.766	2.652	+0.114
	12	2.984	2.792	+0.192
	14	2.953	2.974	-0.021
<u>Respect</u> (N=6)	1	3.422	2.764	+0.658
	2	3.516	3.165	+0.351
	4	3.516	3.091	+0.425
	5	3.328	3.070	+0.258
	6	2.781	2.164	+0.617
	7	2.844	2.574	+0.270
(table continues)				

	Item	<u>"What Is" Column Means</u>		Difference
		Adults	Students	
<u>Input</u> (N=3)	16	2.938	2.199	+0.739
	17	2.453	1.864	+0.589
	19	2.688	2.343	+0.345
<u>Growth</u> (N=3)	21	3.016	2.637	+0.379
	22	3.078	2.753	+0.325
	25	2.734	2.633	+0.101

TABLE 13

Comparison of Factor Means between Adults and
Students on the "What Is" Column
Using the Revised CFK

New Factor Number	Theme of New Factor	Adults	Students	Difference
I*	Caring	3.234	2.8047	+0.4298
II*	Morale/School Spirit	2.9648	2.8700	+0.0948
III*	Respect	2.6930	2.1353	+0.5577
IV*	Input	2.9427	2.6743	+0.2684
V*	Growth	3.2259	2.8337	+0.3922

* Notes: 1 Stems 32-40
 2 Stems 8,10,12,14
 3 Stems 1,2,4,5,6,7
 4 Stems 16,17,19
 5 Stems 21,22,25

TABLE 14

Comparison of Differences in Adult and Student Factor Means
for the "What Is" Column of the Original and
the Revised CFK Instruments

Factor Number	Factor Name	Adults	Students	Difference	New Fctr Number	Theme New Fctr	Adults	Students	Difference
1	Respect	3.3096	2.9908	+0.3188	III ¹	Respect	3.234	2.8047	+0.4298
2	Trust	2.9438	2.6048	+0.3398	II ²	Morale/ School Spirit	2.9648	2.8700	+0.0948
3	High Morale	2.9592	2.7090	+0.2502					
4	Opp. for Input	2.6626	2.3664	+0.2962	IV ³	Input	2.6930	2.1353	+0.5577
5	C. Ac/Soc	2.9030	2.6956	+0.2074	V ⁴	Growth	2.9427	2.6743	+0.2684
6	Cohesive-ness	2.9190	2.7792	+0.1398					
7	School	2.9906	2.6998	+0.2908	I ⁵	Caring	3.2259	2.8337	+0.3922
8	Caring	3.3878	2.9306	+0.4572					

- * Notes: 1 (III) New factor includes some items from old subscales 1 and 2
 2 (II) New factor includes some items from old subscales 2 and 3
 3 (IV) New factor includes some items from old subscale 4
 4 (V) New factor includes some items from old subscale 5
 5 (I) New factor includes some items from old subscales 7 and 8

APPENDIX A

Revised CFK Using Original Item Numbers

FACTOR I: Caring

- 32. Teachers are encouraged to innovate in their classrooms rather than to conform.
- 33. When a student comes along who has special problems, this school works out a plan that helps that student.
- 34. Students are encouraged to be creative rather than to conform.
- 35. Careful effort is made, when new programs are introduced, to adapt them to the particular needs of this community and this school.
- 36. There is someone in this school that I can always count on.
- 37. The principal really cares about students.
- 38. I think people in this school care about me as a person; are concerned about more than just how well I perform my role at school (as student, teacher, parent, etc.).
- 39. School is a nice place to be because I feel wanted and needed there.
- 40. Most people at this school are kind.

FACTOR II: Morale or School Spirit

- 8. Our principal is a good spokesman before the superintendent and the board for our interests and needs.
- 10. Teachers trust students to use good judgment.
- 12. Teachers feel pride in this school and in its students.

14. Parents, teachers, and students would rise to the defense of this school's program if it were challenged.

FACTOR III: Respect

1. In this school even low achieving students are respected.
2. Teachers treat students as persons.
4. Teachers from one subject area or grade level respect those from other subject areas.
5. Teachers in this school are proud to be teachers.
6. Students feel that teachers are "on their side."
7. While we don't always agree, we can share our concerns with each other openly.

FACTOR IV: Opportunity for Input

16. I feel that my ideas are listened to and used in this school.
17. When important decisions are made about the programs in this school, I, personally, have heard about the plan beforehand and have been involved in some of the discussions.
19. While I obviously can't have a vote on every decision that is made in this school that affects me, I do feel that I can have some important input into that decision.

FACTOR V: Growth

21. The teachers are "alive"; they are interested in life around them; they are doing interesting things outside of school.
22. Teachers in this school are "out in front", seeking better ways of teaching and learning.

25. The school supports parent growth. Regular opportunities are provided for parents to be involved in learning activities and in examining new ideas.

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